



# STIC Search Report

## Biotech-Chem Library

STIC Database Tracking Number: 199712

**TO:** Ramsey Zacharia  
**Location:** Remsen 6a79  
**Monday, August 28, 2006**  
**Art Unit:** 1773  
**Phone:** 571-272-1518  
**Serial Number:** 10 / 656648

**From:** Jan Delaval  
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**Remsen 4b30**  
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### Search Notes

## Scientific and Technical Information Center

## SEARCH REQUEST FORM

Requester's Full Name: RAMSEY ZACHARIA Examiner #: 76138 Date: 8/24/06  
 Art Unit: 1773 Phone Number: 2-1518 Serial Number: 10/656,648  
 Location (Bldg/Room#): REM 6B87 (Mailbox #): REM 6A19 Results Format Preferred (circle): PAPER DISK  
\*\*\*\*\*

To ensure an efficient and quality search, please attach a copy of the cover sheet, claims, and abstract or fill out the following:

Title of Invention: OIL REPELLING AGENT

Inventors (please provide full names): AKIO OKAMIYA; TAKAHIKO ITO

Earliest Priority Date: JAN 7, 2003

## Search Topic:

*Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known.*

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent information) along with the appropriate serial number.

SCIENTIFIC REFERENCE BY  
Tech Inf. Ctr.

AUG 25

Pat. & T.M. Office

Composition comprising:

about 100-400 ppm of a UV coloring agent,

about 0.1-0.6 wt% of a fluorine-based polymer, and

a solvent

\*\*\*\*\*

## STAFF USE ONLY

Searcher: Jan

## Type of Search

Searcher Phone #: 22504

NA Sequence (#)

Searcher Location: \_\_\_\_\_

AA Sequence (#)

Date Searcher Picked Up: 8/28/06

Structure (#)

Date Completed: 8/28/06

Bibliographic

Searcher Prep & Review Time: 30

Litigation

Online Time: +60

Fulltext

Other

## Vendors and cost where applicable

STN  Dialog

Questel/Orbit  Lexis/Nexis

Westlaw  WWW/Internet

In-house sequence systems

Commercial  Oligomer  Score/Length

Interference  SPDI  Encode/Transl

Other (specify)

=> fil hcaplus  
FILE 'HCAPLUS' ENTERED AT 11:14:45 ON 28 AUG 2006  
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FILE COVERS 1907 - 28 Aug 2006 VOL 145 ISS 10  
FILE LAST UPDATED: 27 Aug 2006 (20060827/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

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L71 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN  
AN 2005:155563 HCAPLUS  
DN 142:221341  
ED Entered STN: 24 Feb 2005  
TI Antisoiling hard coats with optical properties and their manufacture  
IN Tsubo, Satoe; Lee, Sung-Gil  
PA Sony Corp., Japan  
SO Jpn. Kokai Tokkyo Koho, 17 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
IC ICM B05D0005-00  
ICS B32B0027-30  
CC 42-10 (Coatings, Inks, and Related Products)  
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2005046767	A2	20050224	JP 2003-282980	20030730
PRAI JP 2003-282980		20030730		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2005046767	ICM	B05D0005-00
	ICS	B32B0027-30
	IPCI	B05D0005-00 [ICM,7]; B32B0027-30 [ICS,7]
	IPCR	B05D0005-00 [I,A]; B05D0005-00 [I,C*]; B32B0027-30 [I,A]; B32B0027-30 [I,C*]
	FTERM	4D075/AE03; 4D075/BB26Z; 4D075/BB42Z; 4D075/BB46Z; 4D075/CA02; 4D075/CA34; 4D075/CB06; 4D075/DA04; 4D075/DA06; 4D075/DB13; 4D075/DB37; 4D075/DB38; 4D075/DB43; 4D075/DB47; 4D075/DB48; 4D075/DB49; 4D075/DB50; 4D075/DB53; 4D075/DC24; 4D075/DC27; 4D075/EA07; 4D075/EA19; 4D075/EA21; 4D075/EB16;

4D075/EB22; 4D075/EB33; 4D075/EB43; 4D075/EC45;  
 4F100/AK17D; 4F100/AK25B; 4F100/AK52C; 4F100/AK52D;  
 4F100/AK52K; 4F100/AL06C; 4F100/AL06D; 4F100/AT00A;  
 4F100/BA04; 4F100/BA10A; 4F100/BA10D; 4F100/CC00B;  
 4F100/CC00D; 4F100/GB41; 4F100/GB90; 4F100/JB13B;  
 4F100/JB14B; 4F100/JK12B; 4F100/JL06D; 4F100/JL11C;  
 4F100/JM02B; 4F100/JN01B

- OS MARPAT 142:221341
- AB A title hard coat consecutively consists of an acrylic hard coat, a coupling agent layer, and antisoiling **fluoropolymer** layer. A polycarbonate sheet was coated with an UV-curable acrylic resin, UV-cured, elec. corona-treated, dipped in 10% 3-aminopropyltriethoxysilane-containing 2-methoxypropanol, dried at 40°, dipped in a mixture of 100 parts **fluoropolyether solvent** and 0.1 part **triethoxysilylpropylaminocarbonyldifluoromethyl-terminated perfluoro ethylene oxide-formaldehyde copolymer**, and dried at 40° and 90% relative humidity for 1 h to form a film with water-contact angle 113.3° initially and 105.6° after EtOH cleaning, no oil ink adhesion, easy finger print removability, and good wear **resistance**.
- ST acrylic hard coat coupler antisoiling alkoxy silyl perfluoropolyether layer laminate; multilayer antisoiling hard coat alkoxy silyl contg perfluoropolyether layer
- IT Coupling agents  
 (acrylic hard coat-, coupler layer-, and antisoiling **fluoropolymer** layer-laminated coatings with durability)
- IT Silanes  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (alkoxy, couplers; acrylic hard coat-, coupler layer-, and antisoiling **fluoropolymer** layer-laminated coatings with durability)
- IT Coating materials  
 (antisoiling, multilayer; acrylic **hard** coat-, coupler layer-, and antisoiling **fluoropolymer** layer-laminated coatings with durability)
- IT Acrylic **polymers**, uses  
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (bottom hard coats; acrylic hard coat-, coupler layer-, and antisoiling **fluoropolymer** layer-laminated coatings with durability)
- IT Polyethers, uses  
 Polyoxyalkylenes, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (**perfluoro**, alkoxy silyl group-terminated, antisoiling agents; acrylic hard coat-, coupler layer-, and antisoiling **fluoropolymer** layer-laminated coatings with durability)
- IT **Fluoropolymers**, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (polyether-, **perfluoro**, alkoxy silyl group-terminated, antisoiling agents; acrylic hard coat-, coupler layer-, and antisoiling **fluoropolymer** layer-laminated coatings with durability)
- IT **Fluoropolymers**, uses  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (polyoxyalkylene-, **perfluoro**, alkoxy silyl group-terminated, antisoiling agents; acrylic hard coat-, coupler layer-, and antisoiling **fluoropolymer** layer-laminated coatings with durability)
- IT Polycarbonates, miscellaneous  
 RL: MSC (Miscellaneous)  
 (substrates; acrylic hard coat-, coupler layer-, and antisoiling **fluoropolymer** layer-laminated coatings with durability)

IT 919-30-2, 3-Aminopropyltriethoxysilane 2530-83-8, 3-  
 Glycidoxypolypropyltrimethoxysilane 2768-02-7, Vinyltrimethoxysilane  
 3069-40-7, Trimethoxyoctylsilane 4369-14-6, 3-  
 Acryloxypropyltrimethoxysilane 4420-74-0, 3-  
 Mercaptopropyltrimethoxysilane 15396-00-6, 3-  
 Isocyanatopropyltrimethoxysilane 21142-29-0, 3-  
 Methacryloxypropyltriethoxysilane 26115-70-8,  
 Tris[(trimethoxysilyl)propyl]isocyanurate 82985-35-1,  
 Bis(trimethoxysilylpropyl)amine  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (acrylic hard coat-, coupler layer-, and antisoiling  
**fluoropolymer** layer-laminated coatings with durability)

IT 197444-55-6  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (antisoiling agent; acrylic hard coat-, coupler layer-, and antisoiling  
**fluoropolymer** layer-laminated coatings with durability)

L71 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN  
 AN 2004:550769 HCAPLUS

DN 141:90594

ED Entered STN: 09 Jul 2004

TI Oil repellent **fluoropolymer** agent and  
 coating a workpiece of a disk drive

IN Okamiya, Akio; Ito, Takahiko

PA Minebea Co., Ltd., Japan; Noda Screen Co., Ltd.

SO U.S. Pat. Appl. Publ., 11 pp.

CODEN: USXXCO

DT Patent

LA English

IC ICM B05D0003-06

ICS F16C0032-06; C08K0005-09

INCL 524284000; 427385500; 427558000; 384100000

CC 42-10 (Coatings, Inks, and Related Products)

Section cross-reference(s): 74

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004132881	A1	20040708	US 2003-656648	20030904 <--
	JP 2004211851	A2	20040729	JP 2003-1605	20030107 <--
	CN 1537911	A	20041020	CN 2003-10120780	20031204 <--
PRAI	JP 2003-1605	A	20030107	<--	

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US	2004132881	ICM	B05D0003-06
		ICS	F16C0032-06; C08K0005-09
		INCL	524284000; 427385500; 427558000; 384100000
		IPCI	B05D0003-06 [ICM, 7]; F16C0032-06 [ICS, 7]; C08K0005-09 [ICS, 7]; C08K0005-00 [ICS, 7, C*] <--
		IPCR	B05D0003-02 [N, A]; B05D0003-02 [N, C*]; B05D0005-08 [N, A]; B05D0005-08 [N, C*]; F16C0033-04 [I, C*]; F16C0033-10 [I, A] <--
		NCL	524/284.000; 384/100.000; 427/385.500; 427/558.000
		ECLA	F16C033/10B2
JP	2004211851	IPCI	F16C0033-10 [ICM, 7]; F16C0033-04 [ICM, 7, C*]; F16C0017-02 [ICS, 7]; H02K0007-08 [ICS, 7] <--
		IPCR	B05D0003-02 [N, A]; B05D0003-02 [N, C*]; B05D0005-08 [N, A]; B05D0005-08 [N, C*]; F16C0033-04 [I, C*]; F16C0033-10 [I, A] <--
		FTERM	3J011/AA06; 3J011/AA20; 3J011/CA02; 3J011/EA04;

3J011/KA01; 3J011/RA01; 5H607/BB01; 5H607/BB07;  
 5H607/BB09; 5H607/BB14; 5H607/BB17; 5H607/BB25;  
 5H607/DD03; 5H607/DD14; 5H607/GG01; 5H607/GG02;  
 5H607/GG09; 5H607/GG12; 5H607/GG15; 5H607/GG28

CN 1537911 IPCI C09D0201-04 [ICM, 7]; C09D0201-02 [ICM, 7,C\*];  
 C09D0005-00 [ICS, 7] <--  
 IPCR B05D0003-02 [N,A]; B05D0003-02 [N,C\*]; B05D0005-08  
 [N,A]; B05D0005-08 [N,C\*]; F16C0033-04 [I,C\*];  
 F16C0033-10 [I,A] <--  
 ECLA F16C033/10B2

AB An **oil repellent** agent to coat a dynamic pressure device, such as a fluid dynamic pressure bearing device, includes a **UV coloring agent**, a **F-based polymer**, and a **solvent**. The content of the **UV coloring agent** component is .apprx.100-400 ppm, and of the **F polymer** is .apprx.0.1-0.6% by weight. When the d. of the **fluoropolymer** is 0.2-0.5% by weight, more desirable wet diffusion characteristics are exhibited by the **oil repellent** film. Also the quantity of the generated outgas can be reduced to less than that of an **oil repellent** film formed from an **oil repellent** agent that does not contain a **coloring agent** component.

ST **oil repellent** coating pressure bearing device hard disk drive

IT Bearings

(**fluoropolymer** containing **UV coloring agent** in **solvent**)

IT Coating materials

(**oil-resistant**; **fluoropolymer** containing **UV coloring agent** in **solvent**)

IT Fluoropolymers, uses

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(**perfluoroalkyl**; **fluoropolymer** containing **UV coloring agent** in **solvent**)

L71 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 2004:310137 HCAPLUS

DN 140:341912

ED Entered STN: 16 Apr 2004

TI Oil-repelling agent composition with superior thermal resistance and leakage prevention of lubricating oil in roller bearings

IN Ito, Takahiko

PA INT Screen Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C09K0003-00

ICS C08F0214-26; C08F0234-02; C08K0005-00; C08L0027-18; C08L0045-00

CC 51-8 (Fossil Fuels, Derivatives, and Related Products)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 2004115618	A2	20040415	JP 2002-279387	20020925
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PRAI JP 2002-279387		20020925		
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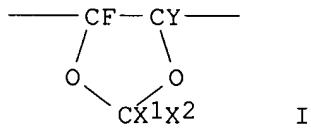
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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JP 2004115618 ICM C09K0003-00  
 ICS C08F0214-26; C08F0234-02; C08K0005-00; C08L0027-18;  
 C08L0045-00  
 IPCI C09K0003-00 [ICM, 7]; C08F0214-26 [ICS, 7]; C08F0214-00  
 [ICS, 7, C\*]; C08F0234-02 [ICS, 7]; C08F0234-00  
 [ICS, 7, C\*]; C08K0005-00 [ICS, 7]; C08L0027-18 [ICS, 7];  
 C08L0027-00 [ICS, 7, C\*]; C08L0045-00 [ICS, 7]  
 IPCR C08F0214-00 [I, C\*]; C08F0214-26 [I, A]; C08F0234-00  
 [I, C\*]; C08F0234-02 [I, A]; C08K0005-00 [I, A];  
 C08K0005-00 [I, C\*]; C08L0027-00 [I, C\*]; C08L0027-18  
 [I, A]; C08L0045-00 [I, A]; C08L0045-00 [I, C\*];  
 C09K0003-00 [I, A]; C09K0003-00 [I, C\*]  
 FTERM 4J002/BD151; 4J002/BK001; 4J002/EF036; 4J002/EF056;  
 4J002/EX036; 4J002/GH00; 4J002/HA05; 4J100/AC26P;  
 4J100/AR32Q; 4J100/BA04Q; 4J100/BB07Q; 4J100/BB18Q;  
 4J100/CA04; 4J100/JA01; 4J100/JA20

GI



- AB The title composition comprises fluororesins having repeating unit of  $-CF_2CF_2-$  and perfluoroalkyl of formula: (I) in which X1 and X2 are independently  $-F$ ,  $-CF_3$ ; Y is  $-F$ ,  $-OR_f$  but  $R_f = C_{1-5}$  perfluoroalkyl.  
 The fluororesins present at 0.002-10 weight% in F-series solvent.  
 The composition is superior in transparency, solubility in the F-series solvent, and thermal resistance in high-speed motor.
- ST oil repellent agent thermal resistance  
 lubricant leakage prevention
- IT Lubricating oils  
**Oilproofing**  
 (oil-repelling agent composition with superior thermal resistance and leakage prevention of lubricating oil in roller bearings)
- IT Fluoropolymers, uses  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (oil-repelling agent composition with superior thermal resistance and leakage prevention of lubricating oil in roller bearings)
- IT Bearings  
 (roller; oil-repelling agent composition with superior thermal resistance and leakage prevention of lubricating oil in roller bearings)
- IT 9002-84-0 24532-46-5 24532-47-6 **24937-79-9**  
 95908-10-4 95991-33-6 95991-35-8  
 95991-37-0 104242-01-5 150872-38-1, Galden SV 90  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (oil-repelling agent composition with superior thermal resistance and leakage prevention of lubricating oil in roller bearings)
- IT 9002-84-0 **24937-79-9** 95908-10-4  
 95991-33-6 95991-35-8 95991-37-0  
 104242-01-5  
 RL: MOA (Modifier or additive use); USES (Uses)

(oil-repelling agent composition with superior thermal resistance and leakage prevention of lubricating oil in roller bearings)

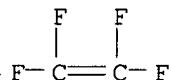
RN 9002-84-0 HCPLUS

CN Ethene, tetrafluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 116-14-3

CMF C2 F4



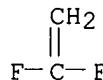
RN 24937-79-9 HCPLUS

CN Ethene, 1,1-difluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-38-7

CMF C2 H2 F2



RN 95908-10-4 HCPLUS

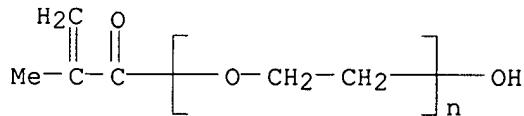
CN 2-Propenoic acid, 2-methyl-, 2-[(heptadecafluorooctyl)sulfonyl]methylamin oethyl ester, polymer with  $\alpha$ -(2-methyl-1-oxo-2-propenyl)- $\omega$ -hydroxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 25736-86-1

CMF (C2 H4 O)n C4 H6 O2

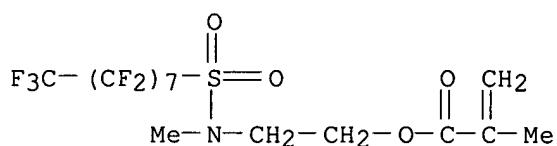
CCI PMS



CM 2

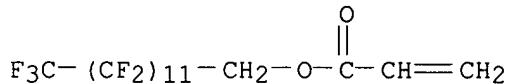
CRN 14650-24-9

CMF C15 H12 F17 N O4 S



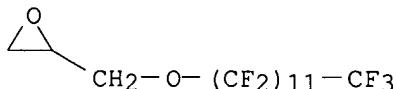
RN 95991-33-6 HCPLUS  
 CN 2-Propenoic acid, 2,2,3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,11,11,12,12,13,13,  
 13-pentacosfluorotridecyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 95991-32-5  
 CMF C16 H5 F25 O2

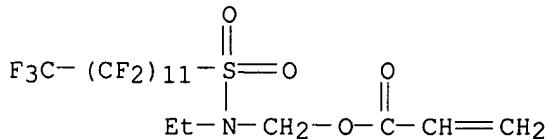
RN 95991-35-8 HCPLUS  
 CN Oxirane, [(pentacosfluorododecyl)oxy]methyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 95991-34-7  
 CMF C15 H5 F25 O2

RN 95991-37-0 HCPLUS  
 CN 2-Propenoic acid, [ethyl[(pentacosfluorododecyl)sulfonyl]amino]methyl ester, homopolymer (9CI) (CA INDEX NAME)

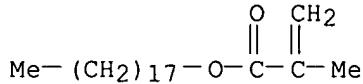
CM 1

CRN 95991-36-9  
 CMF C18 H10 F25 N O4 S

RN 104242-01-5 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, 3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl ester, polymer with octadecyl 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

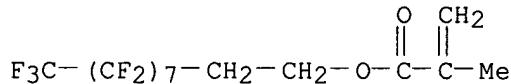
CM 1

CRN 32360-05-7  
 CMF C22 H42 O2



CM 2

CRN 1996-88-9  
 CMF C14 H9 F17 O2



L71 ANSWER 4 OF 8 HCPLUS COPYRIGHT 2006 ACS on STN  
 AN 2002:459954 HCPLUS  
 DN 137:7586  
 ED Entered STN: 20 Jun 2002  
 TI Ultraviolet hardened antireflective film composition  
 IN Kim, Sun Sik; Noh, Tae Hwan; Lim, Dae U.  
 PA Saehan Industries Incorporation, S. Korea  
 SO Repub. Korean Kongkae Taeho Kongbo, No pp. given  
 CODEN: KRXXA7  
 DT Patent  
 LA Korean  
 IC ICM C09D0133-16  
 ICS C08L0033-16  
 CC 42-10 (Coatings, Inks, and Related Products)  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI KR 2000051532	A	20000816	KR 1999-2030	19990122 <--
PRAI KR 1999-2030		19990122		

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
KR 2000051532	ICM C09D0133-16 ICS C08L0033-16 IPCI C09D0133-16 [ICM, 7]; C09D0133-14 [ICM, 7,C*]; C08L0033-16 [ICS, 7]; C08L0033-00 [ICS, 7,C*] IPCR C08L0033-00 [I,C*]; C08L0033-16 [I,A]; C09D0133-14 [I,C*]; C09D0133-16 [I,A]	<-- <-- <-- <--

AB An UV hardened resin composition used for a water-repellent, oil-repellent and antisoiling diffused reflective film useful as a display for liquid crystalline displaying device, a Braun tube, plasma display and the like, comprises: (i) 100 weight parts of fluorine UV hardened composition prepared by mixing fluorine acrylate monomer, polyfunctional thiol compound, light-polymerizing initiator, heat-polymerizing inhibitor and organic

solvent; (ii) 10-70 weight parts of fluorine silica dispersed composition containing the compound prepared by reacting hydrophilic silica particles, pure water and fluorine silane coupling agent under acidic catalyst, dispersing agent and solvent; and (iii) 60-100 weight parts of diluent. The diffused reflective film is prepared by: (i) coating a base film with a mixed coating solution containing 100 weight parts of UV hardened composition, 10-70 weight parts of silica dispersed composition and 60-100 weight parts of diluent; (ii) drying the coated film; and (iii) applying UV rays to the film.  
 ST uv curable coating antireflective film; antireflective film compn acrylic polysiloxane fluorine silica  
 IT Coating materials  
     (UV-curable; UV hardened antireflective film composition)  
 IT Fluoropolymers, uses  
     RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
     (acrylic; UV hardened antireflective film composition)  
 IT Coating materials  
     (antisoiling, water-resistant; UV hardened antireflective film composition)  
 IT Coating materials  
     (diffusion; UV hardened antireflective film composition)  
 IT Polysiloxanes, uses  
     RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
     (fluorine-containing; UV hardened antireflective film composition)  
 IT Coating materials  
     (oil- and water-resistant; UV hardened antireflective film composition)  
 IT Antireflective films  
     (polymeric; UV hardened antireflective film composition)  
 IT Fluoropolymers, uses  
     RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)  
     (polysiloxane-; UV hardened antireflective film composition)  
 IT 7631-86-9D, Silica, reaction products with fluorine silane  
     RL: TEM (Technical or engineered material use); USES (Uses)  
     (UV hardened antireflective film composition)

L71 ANSWER 5 OF 8 HCPLUS COPYRIGHT 2006 ACS on STN  
 AN 2000:430058 HCPLUS  
 DN 133:60159  
 ED Entered STN: 28 Jun 2000  
 TI Scratch-resistant coating compositions and substrates coated therewith  
 IN Tokusan, Koichi; Akada, Katsumi; Muto, Kiyoshi; Ochiai, Shinsuke  
 PA Sumitomo Chemical Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C09D0004-06  
     ICS C08F0002-44; C09D0127-16; C09D0127-20;  
         G02B0001-11  
 CC 42-10 (Coatings, Inks, and Related Products)  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI JP 2000178469	A2 20000627	JP 1998-359043	19981217 <--
PRAI JP 1998-359043		19981217	

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2000178469	ICM	<b>C09D0004-06</b>
	ICS	C08F0002-44; <b>C09D0127-16; C09D0127-20</b> ; G02B0001-11
	IPCI	C09D0004-06 [ICM,7]; C08F0002-44 [ICS,7]; C09D0127-16 [ICS,7]; C09D0127-20 [ICS,7]; G02B0001-11 [ICS,7] <--
	IPCR	C08F0002-44 [I,A]; C08F0002-44 [I,C*]; C09D0004-06 [I,A]; C09D0004-06 [I,C*]; C09D0127-16 [I,A]; C09D0127-16 [I,C*]; C09D0127-20 [I,A]; C09D0127-20 [I,C*]; G02B0001-10 [I,C*]; G02B0001-11 [I,A] <--
AB		Title compns. comprise <b>solvents</b> , 100 parts <b>fluororesins</b> prepared from 20-90% CH <sub>2</sub> :CF <sub>2</sub> and 5-75% C <sub>3</sub> F <sub>6</sub> , 20-200 parts ethyleneic unsatd. group-containing compds., and 0.1-15.0% (based on solid content of the cured compns.) silicone oils. A substrate was soaked in an organic solution containing an initiator, 2% (based on total solids) KF 96H, and 3% blends of 70 parts 20:20:60 C <sub>2</sub> F <sub>4</sub> -C <sub>3</sub> F <sub>6</sub> -CH <sub>2</sub> :CF <sub>2</sub> <b>copolymer</b> and 30 parts dipentaerythritol hexaacrylate and UV-cured to form a product showing good wear <b>resistance</b> (Bemcot M 3 cloth test, 300 times) and easy removal of finger prints.
ST		<b>hexafluoropropene vinylidene fluoride polymer</b> blend polyacrylate coating scratch <b>resistance</b> ; silicone oil <b>fluoropolymer</b> polyacrylate blend coating scratch <b>resistance</b>
IT		Acrylic polymers, uses RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (CH <sub>2</sub> :CF <sub>2</sub> -C <sub>3</sub> F <sub>6</sub> resin/polyacrylate/silicone oil-containing coatings with scratch <b>resistance</b> )
IT		<b>Fluoropolymers, uses</b> RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses) (CH <sub>2</sub> :CF <sub>2</sub> -C <sub>3</sub> F <sub>6</sub> resin/polyacrylate/silicone oil-containing coatings with scratch <b>resistance</b> )
IT		Polysiloxanes, uses RL: MOA (Modifier or additive use); POF (Polymer in formulation); USES (Uses) (oil; CH <sub>2</sub> :CF <sub>2</sub> -C <sub>3</sub> F <sub>6</sub> resin/polyacrylate/silicone oil -containing coatings with scratch <b>resistance</b> )
IT		<b>Coating materials</b> (scratch-resistant; CH <sub>2</sub> :CF <sub>2</sub> -C <sub>3</sub> F <sub>6</sub> resin/polyacrylate/silicone oil-containing coatings with scratch <b>resistance</b> )
IT		67653-78-5P, Dipentaerythritol hexaacrylate homopolymer RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (CH <sub>2</sub> :CF <sub>2</sub> -C <sub>3</sub> F <sub>6</sub> resin/polyacrylate/silicone oil-containing coatings with scratch <b>resistance</b> )
IT		9016-00-6, KF 96H 58130-03-3 RL: MOA (Modifier or additive use); POF (Polymer in formulation); USES (Uses) (CH <sub>2</sub> :CF <sub>2</sub> -C <sub>3</sub> F <sub>6</sub> resin/polyacrylate/silicone oil-containing coatings with scratch <b>resistance</b> )
IT		<b>25190-89-0, Hexafluoropropene-tetrafluoroethylene-vinylidene fluoride copolymer</b> RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)

(CH<sub>2</sub>:CF<sub>2</sub>-C<sub>3</sub>F<sub>6</sub> resin/polyacrylate/silicone oil-containing coatings  
with scratch resistance)

IT 25190-89-0, Hexafluoropropene-  
tetrafluoroethylene-vinylidene fluoride  
copolymer  
RL: POF (Polymer in formulation); TEM (Technical or engineered material  
use); USES (Uses)  
(CH<sub>2</sub>:CF<sub>2</sub>-C<sub>3</sub>F<sub>6</sub> resin/polyacrylate/silicone oil-containing coatings  
with scratch resistance)

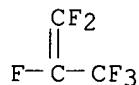
RN 25190-89-0 HCPLUS

CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene and  
tetrafluoroethene (9CI) (CA INDEX NAME)

CM 1

CRN 116-15-4

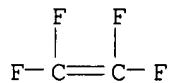
CMF C3 F6



CM 2

CRN 116-14-3

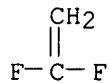
CMF C2 F4



CM 3

CRN 75-38-7

CMF C2 H2 F2



L71 ANSWER 6 OF 8 HCPLUS COPYRIGHT 2006 ACS on STN

AN 1997:259285 HCPLUS

DN 126:245623

ED Entered STN: 21 Apr 1997

TI Patterning of fluoropolymer film

IN Suzuki, Katsumi; Yokozuka, Toshisuke; Aosaki, Ko

PA Asahi Glass Co Ltd, Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM G03F0007-40  
 ICS G03F0007-075; G03F0007-38; H01L0021-027; H01L0021-306  
 CC 76-3 (Electric Phenomena)  
 Section cross-reference(s): 38  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 09043856	A2	19970214	JP 1995-190354	19950726
PRAI JP 1995-190354		19950726		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 09043856	ICM	G03F0007-40 ICS G03F0007-075; G03F0007-38; H01L0021-027; H01L0021-306 IPCI G03F0007-40 [ICM,6]; G03F0007-075 [ICS,6]; G03F0007-38 [ICS,6]; H01L0021-027 [ICS,6]; H01L0021-306 [ICS,6]

AB A **fluoropolymer** film, obtained by casting from a resin composition containing a **polymer** having functional groups and F-containing alicyclic structure, a coupling agent, and a F-containing **solvent**, is patterned by UV irradiation followed by etching with a F-containing **solvents**. The patterned film is useful as a protective film for electronic devices, e.g. a semiconductor device, a water-repellent film for an ink-jet printer head, and water- and oil-repellent coating for a filter.

ST coupling agent **fluoropolymer** patterning compn; etching **fluoropolymer** patterning film compn

IT Coating materials  
 Films  
 (UV-patterning of film from composition containing polymer having functional group and F-containing alicyclic structure, coupling agent, and F-containing **solvent**)

IT Fluoropolymers, processes  
 RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)  
 (UV-patterning of film from composition containing **polymer** having functional group and F-containing alicyclic structure, coupling agent, and F-containing **solvent**)

IT 105-64-6DP, Diisopropyl peroxydicarbonate, reaction products with **perfluorobutanyl** vinyl ether **homopolymer**  
 166450-75-5DP, **Perfluorobutanyl** vinyl ether **homopolymer**, reaction products with diisopropyl peroxydicarbonate  
 RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
 (UV-patterning of film from composition containing **polymer** having functional group and F-containing alicyclic structure, coupling agent, and F-containing **solvent**)

IT 311-89-7, **Perfluorotributylamine** 647-42-7, 2-(  
**Perfluorohexyl**)ethanol 34390-22-2, Aminophenyltrimethoxysilane  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (UV-patterning of film from composition containing **polymer** having functional group and F-containing alicyclic structure, coupling agent, and F-containing **solvent**)

IT 166450-75-5DP, **Perfluorobutanyl** vinyl ether **homopolymer**, reaction products with diisopropyl peroxydicarbonate  
 RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)  
 (UV-patterning of film from composition containing **polymer** having functional group and F-containing alicyclic structure,

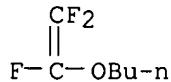
RN coupling agent, and F-containing solvent)  
RN 166450-75-5 HCPLUS  
CN Butene, heptafluoro-1-[(trifluoroethyl)oxy]-, homopolymer (9CI) (CA  
INDEX NAME)

CM 1

CRN 166450-74-4  
CMF C6 F10 O  
CCI IDS

CM 2

CRN 166450-73-3  
CMF C6 H2 F10 O  
CCI IDS



7 ( D1-F )

L71 ANSWER 7 OF 8 HCPLUS COPYRIGHT 2006 ACS on STN  
AN 1992:653523 HCPLUS  
DN 117:253523  
ED Entered STN: 26 Dec 1992  
TI UV-curable organosilazane coatings  
IN Ohsawa, Yoshihito; Hasegawa, Kouhei; Sutou, Masanori; Kuwata, Satoshi  
PA Shin-Etsu Chemical Co., Ltd., Japan  
SO Eur. Pat. Appl., 14 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
IC ICM C09D0183-14  
ICS C09D0183-16  
CC 42-10 (Coatings, Inks, and Related Products)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 498666	A2	19920812	EP 1992-301051	19920207 <--
	EP 498666	A3	19921119		
	R: DE, FR, GB				
	JP 04348172	A2	19921203	JP 1991-60894	19910208 <--
	US 5296511	A	19940322	US 1992-832303	19920207 <--
PRAI	JP 1991-60894	A	19910208		

CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES	
EP 498666	ICM	C09D0183-14		
	ICS	C09D0183-16		
	IPCI	C09D0183-14 [ICM,5]; C09D0183-16 [ICS,5]	<--	
	IPCR	C09D0183-14 [I,A]; C09D0183-14 [I,C*]; C09D0183-16 [I,A]; C09D0183-16 [I,C*]	<--	
JP 04348172	IPCI	C09D0183-14 [ICM,5]; C09K0003-18 [ICA,5]	<--	

US 5296511 IPCI C08G0077-20 [ICM,5]; C08G0077-26 [ICS,5]; C08G0077-00  
 [ICS,5,C\*]; C08F0002-50 [ICS,5]; C08F0002-46 [ICS,5,C\*]  
 IPCR C09D0183-14 [I,A]; C09D0183-14 [I,C\*]; C09D0183-16  
 [I,A]; C09D0183-16 [I,C\*] <--  
 NCL 522/033.000; 522/042.000; 522/044.000; 522/048.000;  
 522/074.000; 522/080.000; 522/099.000; 522/172.000;  
 522/173.000; 528/032.000; 528/038.000

AB Title coatings with good hardness and oil and water repellency contain organic solvents, photosensitizers, and organic silazane polymers having perfluoroalkyl-containing units and unsatd. fatty ester-containing units. Thus, a C2Cl3F3 solution containing a photosensitizer and a polymer (from NH3, C8F17CH2CH2SiCl3, and CH2CMeCOO(CH2)3SiCl3) was spread on a glass plate and cured with UV to give a 0.5-μm film showing pencil hardness 5H, water contact angle 110° and n-hexadecane contact angle 67°.

ST water repellency UV curable fluorosilazane;  
 oil repellency UV curable fluorosilazane;  
 hardness UV curable acrylic fluorosilazane

IT Silazanes

RL: USES (Uses)  
 (fluoroalkyl, acrylic, coatings, UV-curable, hard,  
 oil- and water-repellent)

IT Coating materials

(oil- and water-resistant, hard, acrylic  
 fluorosilazanes, UV-curable)

IT 78560-44-8

RL: USES (Uses)  
 (acrylic silazanes from, for hard coatings)

IT 7351-61-3

RL: USES (Uses)  
 (fluorosilazane polymers from, for coating)

IT 7664-41-7, Ammonia, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with fluoroalkylhalosilanes and acrylic halosilanes,  
 silazanes from, for hard coatings)

L71 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2006 ACS on STN

AN 1985:151043 HCAPLUS

DN 102:151043

ED Entered STN: 04 May 1985

TI Solvent-based fluoropolymer coating compositions

PA Asahi Glass Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C09D0003-78

ICS C09D0003-74

ICA C08L0023-00; C08L0027-12; C08L0027-18

CC 42-10 (Coatings, Inks, and Related Products)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 59219372	A2	19841210	JP 1983-92314	19830527 <--
PRAI JP 1983-92314		19830527		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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JP 59219372	ICM	C09D0003-78
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ICS C09D0003-74  
 ICA C08L0023-00; C08L0027-12; C08L0027-18  
 IPCI C09D0003-78 [ICM, 3]; C09D0003-74 [ICS, 3]; C08L0023-00  
 [ICA, 3]; C08L0027-12 [ICA, 3]; C08L0027-18 [ICA, 3];  
 C08L0027-00 [ICA, 3,C\*] <--  
 IPCR C08L0023-00 [I,A]; C08L0023-00 [I,C\*]

AB The title composition having excellent workability and forming coatings with good water and oil resistance contain HO group-containing **fluoropolymers** (intrinsic viscosity 0.05-2.0 dL/g in THF at 30°) of **tetrafluoroethylene** and/or **chlorotrifluoroethylene** 20-80, α-olefin 5-80, hydroxyalkyl vinyl ether 3-45, and other comonomers 0-40 mol% and HO-reactive polyfunctional hardener. Thus, **tetrafluoroethylene** 35.3, isobutene 15.8, and vinyl acetate 8.1 g were **copolymerd**. in 300 mL Me3COH in the presence of 0.6 g AIBN at 65° for 10 h to obtain a **copolymer** with intrinsic viscosity 0.19 dL/g, which was then hydrolyzed in EtOH-xylene in the presence of NaOEt at 65° for 6 h to give a HO-containing **polymer**. The hydrolyzed **polymer** was dissolved in 50 phr xylene and 50 phr Me3COH, mixed with U-Van 20SE60 20, Catalyst 6000 0.5, and Viosorb 130 UV absorber 10 phr, and baked at 210° for 5 min to give a 20-μ coating with good gloss, scratch resistance, impact strength, and flexibility.

ST **fluoropolymer** coating solvent based; water resistant **fluoropolymer** coating; oil resistant **fluoropolymer** coating; melamine resin crosslinker **fluoropolymer** coating

IT Crosslinking agents (melamine resins and polyisocyanates, for hydroxy group-containing **fluoropolymer** coatings)

IT Coating materials (solvent-based, hydroxy group-containing **fluoropolymers**, water- and oil-resistant)

IT 95892-64-1D, hydrolyzed 95892-65-2 95892-66-3D , hydrolyzed 95892-67-4 95892-68-5  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (coatings, solvent-based, water- and oil-resistant)

IT 86472-86-8  
 RL: MOA (Modifier or additive use); USES (Uses)  
 (crosslinking agents, for hydroxy group-containing **fluoropolymer** coatings)

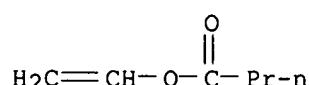
IT 95892-64-1D, hydrolyzed 95892-65-2 95892-66-3D , hydrolyzed 95892-67-4 95892-68-5  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (coatings, solvent-based, water- and oil-resistant)

RN 95892-64-1 HCAPLUS

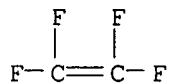
CN Butanoic acid, ethenyl ester, polymer with 2-methyl-1-propene and tetrafluoroethene (9CI) (CA INDEX NAME)

CM 1

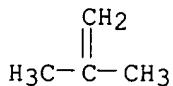
CRN 123-20-6  
 CMF C6 H10 O2



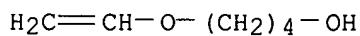
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CRN 116-14-3  
CMF C2 F4

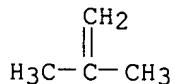
CM 3

CRN 115-11-7  
CMF C4 H8RN 95892-65-2 HCAPLUS  
CN 1-Butanol, 4-(ethenyloxy)-, polymer with chlorotrifluoroethylene and  
2-methyl-1-propene (9CI) (CA INDEX NAME)

CM 1

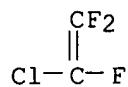
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CMF C6 H12 O2

CM 2

CRN 115-11-7  
CMF C4 H8

CM 3

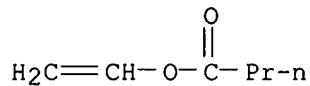
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CMF C2 Cl F3



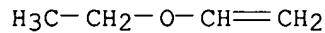
RN 95892-66-3 HCPLUS

CN Butanoic acid, ethenyl ester, polymer with chlorotrifluoroethene, ethene and ethoxyethene (9CI) (CA INDEX NAME)

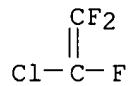
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CRN 123-20-6  
CMF C6 H10 O2

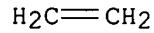
CM 2

CRN 109-92-2  
CMF C4 H8 O

CM 3

CRN 79-38-9  
CMF C2 Cl F3

CM 4

CRN 74-85-1  
CMF C2 H4

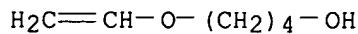
RN 95892-67-4 HCPLUS

CN 1-Butanol, 4-(ethenyloxy)-, polymer with chlorotrifluoroethene, ethene and ethoxyethene (9CI) (CA INDEX NAME)

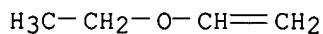
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CRN 17832-28-9

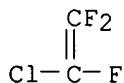
CMF C6 H12 O2



CM 2

CRN 109-92-2  
CMF C4 H8 O

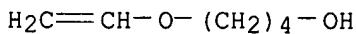
CM 3

CRN 79-38-9  
CMF C2 Cl F3

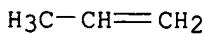
CM 4

CRN 74-85-1  
CMF C2 H4RN 95892-68-5 HCAPLUS  
CN 1-Butanol, 4-(ethenyloxy)-, polymer with chlorotrifluoroethene,  
ethoxyethene and 1-propene (9CI) (CA INDEX NAME)

CM 1

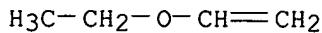
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CMF C6 H12 O2

CM 2

CRN 115-07-1  
CMF C3 H6

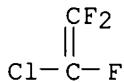
CM 3

CRN 109-92-2  
CMF C4 H8 O



CM 4

CRN 79-38-9  
CMF C2 C1 F3



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http://scientific.thomson.com/support/patents/coverage/latestupdates/

>>> PLEASE BE AWARE OF THE NEW IPC REFORM IN 2006, SEE
http://www.stn-international.de/stndatabases/details/ ipc\_reform.html and
<<<<

>>> FOR FURTHER DETAILS ON THE FORTHCOMING DERWENT WORLD PATENTS
    INDEX ENHANCEMENTS PLEASE VISIT:
<<<<
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L106 ANSWER 1 OF 8 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN
AN 2005-743363 [76] WPIX
DNN N2005-612768 DNC C2005-226602
TI Reducing corrosion of head element during manufacture of disk drive
    including rework operations, involves removing the head element from the
    housing of disk drive, and applying non-permanent protective coating to
    the head element.
DC A85 L03 T03
IN AMARIA, M; CROWDER, M S; RUPP, R E; TURNER, R
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PA (MAXT-N) MAXTOR CORP  
 CYC 1  
 PI US 6954978 B1 20051018 (200576)\* 10 G11B005-127  
 ADT US 6954978 B1 Provisional US 2000-239158P 20001010, US  
 2001-975642 20011010  
 PRAI US 2000-239158P 20001010; US 2001-975642  
 20011010  
 IC ICM G11B005-127  
 ICS H04R031-00  
 AB US 6954978 B UPAB: 20051125  
 NOVELTY - Reducing corrosion of a head element during the manufacture of a disk drive including rework operations, involves opening the housing of the disk drive; removing the head element from the housing of the disk drive; applying a non-permanent protective coating to the head element; and storing the head element following the step of applying the non-permanent protective coating.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(a) shipping a head element removed from a disk drive during manufacture of the disk drive, comprising removing the head element from the disk drive; applying a protective coating to the head element; mounting the head element to a shipping comb; placing the head element into a container; and transporting the container;

(b) storing a head element removed from a disk drive, comprising removing the head element from the disk drive; applying a **fluorocarbon polymer** protective coating to the head element; mounting the head element to a slipping comb; and placing the head element in a storage container; and

(c) manufacturing a disk drive, comprising disassembling a portion of the disk drive; removing a head element from the disk drive; applying a temporary protective coating on the head element after disassembly where disassembly includes removal of the head element from the disk drive; reworking a portion of the disk drive; and removing at least a portion of the temporary protective coating after the step of reworking a portion of the disk drive.

USE - The method is used for reducing corrosion of head element during the manufacture of a disk drive including rework operations (claimed).

ADVANTAGE - By providing a protective coating to the head element during the reworking process, the head element is protected from corrosion, and cost savings are realized in the form of conserved parts, i.e., not having to replace the head element. Future repairs are reduced and extended life is achieved because the heads have been protected from corrosion.

DESCRIPTION OF DRAWING(S) - The figure shows a flowchart of operations steps for reducing corrosion of heat element during manufacture of disk drive.

Dwg.5/5

FS CPI EPI  
 FA AB; GI  
 MC CPI: A04-E10; A11-B05D; A12-E08A2; L03-B05M  
 EPI: T03-A03J9; T03-A08A1C

TECH UPTX: 20051125

TECHNOLOGY FOCUS - IMAGING AND COMMUNICATION - Preferred Method: The head element is cleaned before the non-permanent protective coating is applied. The non-permanent protective coating is applied in a vacuum chamber and utilizing **solvent**- or vapor-mediated deposition. The non-permanent protective coating is performed by depositing precursor molecules in the vapor phase. The method further comprises post-processing the non-permanent protective coating to enhance the corrosion protection of the head element. The post-processing step is performed by exposing the

nonpermanent protective coating to infrared, ultraviolet, plasma, or radiant heat.

TECHNOLOGY FOCUS - POLYMERS - Preferred Materials: The non-permanent protective coating has a thickness of 50-250Angstrom.

L106 ANSWER 2 OF 8 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN  
 AN 2005-365474 [37] WPIX  
 CR 2003-456185 [43]; 2004-696978 [68]; 2005-170985 [18]  
 DNN N2005-296248 DNC C2005-112294  
 TI Making a monolithic polymer element in a microchannel, useful e.g. to control fluid flow, comprises preparing a monomer mixture, adding a solvent; loading into a capillary tube; polymerizing; and flushing unpolymerized monomer.  
 DC A89 B04 D16 J04 X25  
 IN HASSELBRINK, E F; KIRBY, B J; REHM, J E; SHEPODD, T J  
 PA (HASS-I) HASSELBRINK E F; (KIRB-I) KIRBY B J; (REHM-I) REHM J E; (SHEP-I) SHEPODD T J; (SAND-N) SANDIA NAT LAB  
 CYC 1  
 PI US 2005097951 A1 20050512 (200537)\* 20 G01F003-08  
 US 6988402 B2 20060124 (200607) G01F003-02  
 ADT US 2005097951 A1 CIP of US 2000-695816 20001024, Div ex US 2002-141906 20020508, US 2003-655337 20030904; US 6988402 B2 CIP of US 2000-695816 20001024, Div ex US 2002-141906 20020508, US 2003-655337 20030904  
 FDT US 2005097951 A1 CIP of US 6782746; US 6988402 B2 CIP of US 6782746, Div ex US 6952962  
 PRAI US 2002-141906 20020508; US 2000-695816 20001024; US 2003-655337 20030904  
 IC ICM G01F003-02; G01F003-08  
 AB US2005097951 A UPAB: 20060130  
 NOVELTY - Making a monolithic polymer element (I) in a microchannel (II) comprises preparing a monomer mixture (A) comprising at least one of a cross-linking agent, a nonpolar monomer and a monomer capable of carrying a charge at a pH of 2-12; adding the monomer mixture to a solvent; loading the mixture into a capillary tube; polymerizing the mixture; and flushing unpolymerized monomer from the microchannel.

DETAILED DESCRIPTION - Making a monolithic polymer element (I) in a microchannel (II) ((I) conforms to the configuration of (II) and does not bond to the microchannel wall) comprises preparing a monomer mixture (comprising at least one of a cross-linking agent (ethylene glycol diacrylate, diethylene glycol diacrylate, propylene glycol diacrylate, butanediol diacrylate, neopentyl glycol diacrylate, hexanediol diacrylate, pentaerythritol triacrylate, pentaerythritol tetracrylate or trimethylolpropane triacrylate), a nonpolar monomer (1-12C alkyl acrylates, fluorinated or methacrylate versions of these monomers or styrene) and a monomer capable of carrying a charge at a pH of 2-12 (1-12C alkyl or aryl acrylates substituted with sulfonate, phosphate, boronate, carboxylate, amine or ammonium)); adding the monomer mixture to a solvent (comprising at least one of 1-6C alcohols, 4-8C ethers, 3-6C esters, 1-4C esters, 1-4C carboxylic acids, methyl sulfoxide, sulfolane, N-methyl pyrrolidone, dioxane, dioxolane or acetonitrile, and a polymerization initiator); (where the monomer/solvent mixture forms a single phase mixture at below 40 deg. C and the ratio of the monomer to solvent is 90:10-30:70) loading the mixture into a capillary tube; polymerizing the mixture by exposing at least a portion of the mixture to radiation; and flushing unpolymerized monomer from the microchannel. The source of radiation is a laser (frequency doubled Argon-ion laser operating at 257 nm). (I) is disposed

within a microchannel. The photo-initiator is 2,2'-azobisisobutyronitrile.

INDEPENDENT CLAIMS are also included for:

(1) making a mobile, monolithic polymer element in a microchannel comprises injecting a monomer mixture (A) dissolved in a solvent into the microchannel, where (A) (polymer) is formed by polymerizing the monomer does not bond to the microchannel wall; polymerizing the monomer by application of radiation; and flushing unpolymerized monomer mixture from the microchannel;

(2) a device for controlling fluid flow in a microchannel comprising a mobile monolithic polymer element disposed in the microchannel; at least one retaining means disposed in the microchannel; and means for applying a displacing force to the either end of the microchannel;

(3) making a shaped monolithic polymer element disposed within a microchannel comprising injecting (A): polymerizing the monomer by application of radiation: flushing unpolymerized monomer mixture from the microchannel; exposing the surface of the polymer element to radiation to depolymerize a portion of the surface and shape the polymer element; and flushing the microchannel with a liquid to remove depolymerized material;

(4) making a mobile, monolith polymer element in a microchannel comprising preparing (A) by mixing together 1,3-butanedioldiacrylate, tetrahydrofurfuryl acrylate, hexyl acrylate, acryloyloxyethyltrimethylammonium methyl sulfate and a photoinitiator; preparing a solvent mixture by mixing together acetonitrile, methoxyethanol and phosphate buffer; mixing together the monomer and solvent mixtures in the ratio of 60:40 by volume; loading the combined mixture into a microchannel; polymerizing the combined mixture by exposure to UV radiation; and flushing unreacted monomer from the microchannel;

(5) making a mobile monolithic polymer element in a microchannel comprising preparing a monomer/solvent mixture by combining together pentaerythritol triacrylate (PETRA), hydroquinone monomethyl ether, 1-propanol, and photo-initiator equal to 0.5% of the weight of the PETRA; injecting the monomer/solvent mixture into a microchannel; and photopolymerizing the mixture; and

(6) a device for controlling fluid flow in a microchannel, comprising (I) is disposed in the microchannel; spaced apart retaining means disposed in the microchannel; a bypass duct; and means for applying a displacing force to the either end of the microchannel.

USE - (I) is useful for fluid flow control in microfluidic devices, which is useful to control fluid or ionic current flow, to isolate electric fields (to isolate electroosmotic or electrophoretic flows).

ADVANTAGE - (I) provides effective seal against fluid flow for valving applications. The microfluid control devices does not require expensive and complicated manufacturing and/or assembly processes

Dwg.0/14

FS CPI EPI

FA AB; DCN

MC CPI: A08-S02; A10-B06; A11-B05C; A12-L02C; A12-L04B; B04-C03; B11-C09;  
D05-H; J04-B

EPI: X25-A06

TECH UPTX: 20050613

TECHNOLOGY FOCUS - POLYMERS - Preferred Polymers: The radiation is UV, visible or infrared radiation. The portion of the monomer mixture exposed to radiation is defined by focusing a point or collimated source of radiation into the shape desired for polymerization. The portion of the monomer mixture exposed to radiation is defined by a mask. The radiation includes thermal, visible or UV radiation and the

wavelength of the UV radiation is equal to or greater than 257 nm.

L106 ANSWER 3 OF 8 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN  
 AN 2005-343291 [35] WPIX  
 DNC C2005-106226  
 TI Production of unsupported permeable membrane useful for fine filtration of gases or liquids involves depositing a solution of **fluorocarbon copolymer** on dense surface to form membrane, followed by annealing, applying monomer and **polymerizing**.  
 DC A14 A88  
 IN SIMONETTI, J A; YAEGER, S  
 PA (PTIA-N) PTI ADVANCED FILTRATION INC  
 CYC 1  
 PI US 2005082219 A1 20050421 (200535)\* 25 B29C071-00  
 ADT US 2005082219 A1 US 2003-685975 20031015  
 PRAI US 2003-685975 20031015  
 IC ICM B29C071-00  
 AB US2005082219 A UPAB: 20050603  
 NOVELTY - Production of annealed hydrophilic unsupported porous permeable membrane (M1) involves: preparing a casting solution including a **solvent**, a **non-solvent** and a dissolved **fluorocarbon copolymer**; depositing the solution on dense surface to form a membrane; annealing the membrane to produce annealed membrane (A1); separating (A1) from dense surface; applying a monomer solution to (A1); and applying energy to (A1) and the monomer solution.

DETAILED DESCRIPTION - Production of annealed hydrophilic unsupported porous permeable membrane (M1) involves: preparing a casting solution including a **solvent**, a **non-solvent** and a dissolved **fluorocarbon copolymer**; depositing the solution on dense surface to form a membrane; annealing the membrane at annealing temperature near a **polymer** glass transition temperature to produce annealed membrane (A1); separating (A1) from dense surface; applying a monomer solution to (A1); and applying energy to (A1) and the monomer solution to initiate formation of free radicals in (A1) and the monomer solution and to react them in **Polymerization** process. An INDEPENDENT CLAIM is included for a cartridge filter comprising: either (i) a protective guard, a perforated hollow core, a pair of end caps, and a pleated (M1) placed between the protective guard and the hollow core and in contact with the end caps; or (ii) an inlet, an outlet, a housing, and at least one (M1).

USE - For the production of unsupported porous **fluorocarbon copolymer** membrane (claimed), useful in applications requiring fine filtration and filtration of gases and liquids such as chemical solutions.

ADVANTAGE - The membrane is mechanically strong, thermally stable, relatively chemically inert, and is insoluble in most organic **solvents**. The membrane exhibits high tensile strength, narrower pore size distribution and resistance to shrinkage when exposed to elevated temperatures in comparison to other unsupported membranes and therefore are suitable for e.g. pharmaceutical or other applications that require the membrane to be sterilized in an autoclave. Are less expensive to produce than their supported counterparts.

Dwg.0/13

FS CPI  
 FA AB  
 MC CPI: A04-E10B; A04-F01A; A08-S02; A10-B04; A11-B02; A11-B04;  
 A12-W11A

TECH UPTX: 20050603  
 TECHNOLOGY FOCUS - CERAMICS AND GLASS - Preferred Components: The dense

surface is a glass or plexiglass.

TECHNOLOGY FOCUS - INSTRUMENTATION AND TESTING - Preferred Process: The annealing temperature is 130 - 140degreesC. Depositing the casting solution includes coating a portion of the dense surface with the casting solution using a knife coating process. The annealing temperature is selected to maximize a tensile strength of (A1). Applying the energy to (A1) includes irradiating (A1) with **ultraviolet (UV)** light. The irradiated surface of (A1) is not in contact with oxygen when (A1) is irradiated with **UV** light. The irradiated surface is placed in contact with an airtight film, which transmits the **UV** light. Irradiating (A1) includes focusing energy from an **UV** energy source on an irradiated surface of (A1). Dissolving a **fluorocarbon polymer** includes dissolving a **tetrafluoroethylene/vinylidene fluoride copolymer** (9 - 12.5 wt.%) in a heated **solvent** (60 - 70 wt.%) at 30 - 50degreesC, mixing a resultant solution with a precipitating mixture to produce a heated casting solution comprising a **fluorocarbon polymer** component including (wt.%): **tetrafluoroethylene** (23 - 25) and **vinylidene fluoride** (75 - 77). The precipitating mixture is a mixture of alcohol and deionized water. In the course of mixing the **copolymer** solution with a precipitating mixture maintaining a difference of 3degreesC in their temperatures. The temperature of the casting solution, which is applied on the non-porous material is maintained at 25 - 45degreesC. While applying the casting solution, the storing of non-porous material by short-term storage occurs under the conditions of free evaporation of a portion of **solvent** for partial hardening of casting solution and consequent drying of the membrane. The storing is effected in at least three successive drying zones, in which temperature, increasing from one zone to another, is maintained within the following ranges: first zone: 45 - 55degreesC, second zone: 55 - 65degreesC, third zone: 90 - 100degreesC, and absolute humidity in each drying zone is maintained at the level of less than or equal to 5 g/m<sup>3</sup>. The short storage for partial hardening of casting solution is performed at 18 - 25degreesC for about 0.5 - 1.0 minute. Preferred Device: The pleated (M1) is in contact with a support layer and a drainage layer. The cartridge filter includes two pleated (M1) superimposed so that a pleated membrane closer to the support layer has pore size of 0.2 - 0.8 microns, and a second pleated (M1) has pore size of 0.04 - 0.45 microns. The active surfaces of both the pleated membranes are directed towards the support layer. The cartridge filter includes at least one (M1) formed as a flat sheet or a flat disc. The flat discs are laminated together to form a disk module. The disk module includes two annealed hydrophilic unsupported porous **fluorocarbon** membrane discs with a drainage layer in between. The disk modules are stacked one on top of another and are contained in a guard.

TECHNOLOGY FOCUS - ORGANIC CHEMISTRY - Preferred Components: The **solvent** is acetone. Non-**solvent** is either water or alcohol. The alcohol is propyl or isopropyl alcohol present in an amount of at least 14 wt.% of the casting solution containing deionized water (at least 5 wt.%).

TECHNOLOGY FOCUS - POLYMERS - Preferred Components: The dense surface is Mylar (polyester), polypropylene, polyethylene, or polyvinylidene chloride (PVDC). The casting solution includes (wt.%): **fluorocarbon copolymer** (9.5 - 12.5), non-**solvent** (25 - 27), and **solvent** (60 - 64). The monomer solution includes an acrylate monomer. (M1) Contains, as the **fluorocarbon polymer**, the mixture of the **polymers** (85 wt.%), comprised of **tetrafluoroethylene/vinylidene fluoride**

**copolymer and a fluorocarbon polymer (selected from polyvinylidene fluoride, vinylidene fluoride/trifluorochloroethylene copolymer or hexafluoropropylene/vinylidene fluoride copolymer).**

L106 ANSWER 4 OF 8 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN  
 AN 2005-039267 [04] WPIX  
 DNC C2005-012998  
 TI High-abrasion and weather resistant water-based coating used in weatherstrips, windshields, wipers, and outer belts, comprises boron nitride, high molecular weight silicone resin, resin binder, and cross-linking agent.  
 DC A13 A14 A26 A28 A82 A95 E36 G02  
 IN PINTER, M; RAHIM, M; PINTER, M W  
 PA (NATT) NAT STARCH & CHEM INVESTMENT HOLDING COR; (PINT-I) PINTER M W;  
 (RAHI-I) RAHIM M; (NATT) NAT STARCH & CHEM INVESTMENT HOLDING CORP  
 CYC 109  
 PI WO 2004099327 A1 20041118 (200504)\* EN 15 C09D007-12  
 RW: AT BE BG BW CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE  
 LS LU MC MW MZ NL OA PL PT RO SD SE SI SK SL SZ TR TZ UG ZM ZW  
 W: AE AG AL AM AT AU AZ BA BB BG BR BW BY BZ CA CH CN CO CR CU CZ DE  
 DK DM DZ EC EE EG ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG  
 KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NA NI NO NZ  
 OM PG PH PL PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG  
 US UZ VC VN YU ZA ZM ZW  
 US 2005192391 A1 20050901 (200558) C08K003-38  
 EP 1618158 A1 20060125 (200608) EN C09D007-12  
 R: AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IT LI LT LU  
 LV MC MK NL PL PT RO SE SI SK TR  
 BR 2004009506 A 20060418 (200628) C09D007-12  
 MX 2005011191 A1 20060101 (200644) C04B035-634  
 EP 1618158 B1 20060802 (200651) EN C09D007-12  
 R: AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL  
 PT RO SE SI SK TR  
 ADT WO 2004099327 A1 WO 2004-US11319 20040413; US 2005192391 A1 **CIP of US 2003-427074 20030430**, US 2004-783315 20040220; EP 1618158 A1 EP  
 2004-760537 20040413, WO 2004-US11319 20040413; BR 2004009506 A BR  
 2004-9506 20040413, WO 2004-US11319 20040413; MX 2005011191 A1 WO  
 2004-US11319 20040413, MX 2005-11191 20051017; EP 1618158 B1 EP  
 2004-760537 20040413, WO 2004-US11319 20040413  
 FDT EP 1618158 A1 Based on WO 2004099327; BR 2004009506 A Based on WO  
 2004099327; MX 2005011191 A1 Based on WO 2004099327; EP 1618158 B1 Based  
 on WO 2004099327  
 PRAI US 2004-783315 20040220; **US 2003-427074 20030430**  
 IC ICM C04B035-634; C08K003-38; C09D007-12  
 ICS C04B035-63; C09D005-02; C09D183-04; C10M161-00  
 AB WO2004099327 A UPAB: 20050117  
 NOVELTY - A high-abrasion and weather resistant water-based coating comprises boron nitride, high molecular weight silicone resin, resin binder, and cross-linking agent.  
 DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a method of producing high-abrasion and weather resistant coating comprising forming pre-dispersion containing boron nitride and water; and adding silicone resin, resin binder, and cross-linking agent to the pre-dispersion.  
 USE - Used in article such as weatherstrips, windshields, wipers, and automotive seal; for flock replacement coating for glass run; and for appearance coating for outer belt (claimed).

**ADVANTAGE** - The invention provides high abrasion resistance and excellent weathering resistance.

Dwg.0/0

FS CPI

FA AB; DCN

MC CPI: A06-A00E1; A07-B04; A08-D01; A12-B01A; A12-B01C; E07-A03B; E07-D01;  
E07-D13B; E07-E01; E10-A14B; E31-Q03; E32-B; G02-A05; G02-A05K

TECH UPTX: 20050117

**TECHNOLOGY FOCUS - POLYMERS** - Preferred Compounds: The coating further comprises high **ultraviolet (UV) stabilizer** and/or high **UV absorber**. The resin binder comprises blend of acrylic resin, polyurethane resin, and **fluoropolymer**, preferably blend of styrene acrylic, aliphatic polyester polyurethane, **fluorinated acrylic copolymers**, **fluoro** ethylene-alkyl vinyl ether, and/or **fluorinated alternative copolymers**. The coating further comprises dispersing agents, rheology modifiers, amines, preservatives, wetting agents, **co-solvents**, carbon black, polyamide, chlorinated polyol, and/or catalyst. It further comprises epoxy, epoxy silane, carbodiimide, melamine, oxazoline, polyisocyanate, isocyanate, blocked isocyanate, aziridine, melamine-formaldehyde, polyaziridine, and/or urea formaldehyde. The high-molecular weight silicone resin is polydimethylsiloxane. Preferred Compositions: The coating comprises 0.1-20, preferably 0.5-5 wt.% boron nitride; 1-40, preferably 8-20 wt.% silicon resin; and 4-30, preferably 4-20 resin binder.

L106 ANSWER 5 OF 8 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN

AN 2004-552036 [53] WPIX

DNN N2004-436715 DNC C2004-202064

TI Oil-repelling agent for forming oil-repelling film on e.g. dynamic pressure device, comprises ultraviolet coloring agent, and **fluorine-based polymer**.

DC A14 A88 E13 P42 Q62 T03 V06

IN ITO, T; OKAMIYA, A

PA (MINW) MINEBEA KK; (NODA-N) NODA SCREEN KK

CYC 3

PI US 2004132881 A1 20040708 (200453)\* 11 B05D003-06 <--  
JP 2004211851 A 20040729 (200453) 19 F16C033-10 <--  
CN 1537911 A 20041020 (200510) C09D201-04

ADT US 2004132881 A1 US 2003-656648 20030904; JP 2004211851 A JP 2003-1605  
20030107; CN 1537911 A CN 2003-10120780 20031204

PRAI JP 2003-1605 20030107

IC ICM B05D003-06; C09D201-04; F16C033-10  
ICS C08K005-09; C09D005-00; F16C017-02; F16C032-06;  
H02K007-08

AB US2004132881 A UPAB: 20060727

NOVELTY - An **oil-repelling** agent comprises **UV** coloring agent (100-400 ppm), and **fluorine-based polymer**

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for:

(a) formation of an **oil-repelling** film by coating surface of a work piece, e.g. sleeve (1) or shaft (2) of pressure bearing device, with the inventive **oil-repelling** agent to form an inspection coating, drying the coating, and baking the **oil-repelling** agent at 90-150 deg. C for 1 hour or until an **oil-repelling** film is formed; and

(b) a fluid dynamic pressure bearing component having a surface provided with **oil-repelling** agent.

USE - For use in forming **oil-repelling** film on

e.g. dynamic pressure device such as a fluid-dynamic-pressure bearing device loaded that is loaded on spindle motor of hard disk drive.

**ADVANTAGE** - The inventive **oil-repelling** agent generates reduced amount of outgas. It produces a film that prevents wet diffusion.

**DESCRIPTION OF DRAWING(S)** - The figure is an enlarged perspective view of a cross-section of a spindle motor.

Sleeve 1

Shaft 2

Hub 3

Dynamic pressure oil 5

Terminal or end face of sleeve 6

Outer diameter part of shaft 7

Dwg.3/6

FS CPI EPI GMPI

FA AB; GI; DCN

MC CPI: A04-E10; A12-E08A2; A12-H03; E06-A01  
EPI: T03-A08A1C; T03-F02C3C; T03-N01;  
V06-M10; V06-M11; V06-U04A

TECH UPTX: 20040818

**TECHNOLOGY FOCUS - POLYMERS** - Preferred Composition: The **oil-repelling** agent comprises UV coloring agent (150-300 ppm) and **fluorine-based polymer** (0.1-0.6, preferably 0.2-0.5 wt.%). It may contain **solvent**, and organic pigments and/or dyes.

**TECHNOLOGY FOCUS - ORGANIC CHEMISTRY** - Preferred Components: The UV coloring agent is a compound from the coumarin system.

L106 ANSWER 6 OF 8 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN  
AN 2001-502395 [55] WPIX  
DNC C2001-151034  
TI Ultraviolet curable lubricating composition for coating substrate such as machine tools, comprises mixture containing aliphatic acrylated oligomer devoid of volatile organic **solvents**, after curing the composition.  
DC A14 A21 A25 A82 G02 H07  
IN KROHN, R C  
PA (SLID-N) SLIDEKOTE INC; (ALPH-N) ALLIED PHOTOCHEMICAL INC; (KROH-I) KROHN R C; (ALPH-N) ALLIED PHOTOCHEMICAL INC  
CYC 95  
PI WO 2001040385 A2 20010607 (200155)\* EN 19 C09D004-00 <--  
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
NL OA PT SD SE SL SZ TR TZ UG ZW  
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM  
DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC  
LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE  
SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW  
AU 2001041394 A 20010612 (200159) C09D004-00 <--  
EP 1252238 A2 20021030 (200279) EN C09D004-00 <--  
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL RO  
SI  
US 2003017954 A1 20030123 (200310) C10M107-28 <--  
MX 2002005257 A1 20030901 (200465) C08F220-18 <--  
US 7067462 B2 20060627 (200643) C10M141-00  
ADT WO 2001040385 A2 WO 2000-US42603 20001206; AU 2001041394 A  
AU 2001-41394 20001206; EP 1252238 A2 EP 2000-992183  
20001206, WO 2000-US42603 20001206; US 2003017954 A1  
Provisional US 1999-169248P 19991206, CIP of WO 2000-US42603  
20001206, US 2002-164338 20020605; MX 2002005257 A1 WO

2000-US42603 20001206, MX 2002-5257 20020527; US 7067462 B2  
 Provisional US 1999-169248P 19991206, CIP of WO 2000-US42603  
 20001206, US 2002-164338 20020605

FDT AU 2001041394 A Based on WO 2001040385; EP 1252238 A2 Based on WO  
 2001040385; MX 2002005257 A1 Based on WO 2001040385

PRAI US 1999-169248P 19991206; US 2002-164338  
 20020605

IC ICM C08F220-18; C09D004-00; C10M107-28; C10M141-00; C10M141-10  
 ICS C08F290-06; C08F290-14; C09D004-06; C10M145-00; C10M145-14

AB WO 200140385 A UPAB: 20050316

**NOVELTY** - An **ultraviolet (UV)** curable lubricating composition for use in coating substrate comprises a mixture containing at least an aliphatic acrylated oligomer devoid of volatile organic **solvents**, incorporated in the coating, after curing the composition.

**DETAILED DESCRIPTION** - An INDEPENDENT CLAIM is also included for method of coating a substrate with the lubricating composition, which involves applying 10-45 weight percent (weight%) of an aliphatic acrylate oligomer mixture, 15-60 weight% of isobornyl acrylate monomer, 2-8 weight% of acrylated epoxy oligomer, 2-8 weight% of photoinitiator, 0.0-8 weight% of flow promoting agent and 15-40 weight% of Teflon (RTM) composition to that of lubricating composition, and illuminating the lubricating composition on the substrate with **UV** light sufficient to cure the composition into lubricating coating.

**USE** - For coating on machine tools such as drill bits and end mills, close tolerance gimbals, bearings, shafts and gears. Also useful for coating wood surfaces which are subjected to friction.

**ADVANTAGE** - The **UV** curable composition contains reactive monomers instead of **solvents**, thus eliminating the detrimental effects of volatile organic compounds. Since the **UV** curable process is **solvent** free, the necessity of time consuming and expensive pollution abatement procedures are greatly reduced. The composition enables safe coating on heat sensitive materials and cured with **UV** light without thermal degradation of heat sensitive substrates. **UV** light is of relatively low cost source energy due to its wide spread availability.

Dwg.0/0

FS CPI

FA AB

MC CPI: A04-A03; A04-B09; A04-F06E7; A10-B06; A10-E24; A11-B05C; A12-H10;  
 G02-A05; H07-D

TECH UPTX: 20010927

**TECHNOLOGY FOCUS - POLYMERS** - Preferred Amount: 10-45 weight percent (wt.%) of aliphatic acrylated oligomer mixture is present in the lubricating composition. Preferred Mixture: The oligomer mixture contains (in wt.%) aliphatic urethane diacrylate (AUD) (10) diluted in 1,6-hexanediol diacrylate (HDD), aliphatic urethane triacrylate (15) diluted in 1,6-HDD. AUD blended with tripropylene glycol diacrylate (20), AUD blended with ethoxylated trimethylol propane triacrylate (25), AUD blended with 2(2-ethoxyethoxy)ethyl acrylate (19), AUD blended with tripropylene glycol diacrylate (20), AUD blended with tripropylene glycol diacrylate (25%) and/or AUD. Preferred Components: The composition further comprises 15-60 wt.% of isobornyl acrylate monomer such as isobornyl acrylate and/or isobornyl methacrylate, at least an aliphatic acrylate oligomer in at least one urethane oligomer, 2-8 wt.% of acrylated epoxy oligomer, 2-8 wt.% of photoinitiator, 0.0-8 wt.% of flow promoting agent and 15-40 wt.% of Teflon (RTM) composition.

Preferred Photoinitiator: The photoinitiator is 1-hydroxycyclohexyl phenyl ketone, 2-methyl-1-(4-(methylthio) phenyl)-2-morpholino propane-1, 50% each of 1-hydroxy cyclohexyl phenyl ketone and benzophenone,

2,2-dimethoxy-1,2-diphenylethan-1-one, 25% of bis(2,6-dimethoxybenzoyl-2,4,4-trimethyl pentyl phosphine oxide and 75% of 2-hydroxy-2-methyl-1-phenyl-propan-1-one, 2-hydroxy-2-methyl-1-phenyl-1-propane, 50% each of 2,4,6-trimethylbenzoyldiphenyl-phosphine oxide and 2-hydroxy-2-methyl-1-phenyl-propan-1-one and mixed triaryl sulfonium hexafluoroantimonate salts and/or mixed triaryl sulfonium hexafluorophosphate salts. Preferred Oligomer: The acrylate epoxy oligomer is novolac epoxy acrylate (20%) diluted with tripropylene glycol diacrylate and/or di-functional bisphenol based epoxy acrylate. Preferred Method: UV light is illumination-impinged on lubricating composition so as to cure the composition. The composition is applied by spraying, screen-printing, dipping the substrate into the lubricating composition, brushing or selectively depositing the composition on predetermined location of the substrate. The substrate is coated by applying the lubricating composition comprising 11-21 wt.%, preferably of an aliphatic acrylate oligomer mixture, 15-60 wt.% of isobornyl acrylate monomer, 2-8 wt.% of acrylated epoxy oligomer, 2-8 wt.% of photoinitiator, 0.0-8 wt.% of flow promoting agent and 15-40 wt.% of Teflon (RTM) composition to that of lubricating composition, and illuminating the lubricating composition on the substrate with UV light sufficient to cure the composition into lubricating coating.

ABEX

UPTX: 20010927

EXAMPLE - (In weight percent) IBOA (isobornyl acrylate) (22.1) and Irgacure 1700 (25% of bis(2,6-dimethoxybenzol-2,4,4-trimethyl pentyl phosphine oxide and 75% of 2-hydroxy-2-methyl-1-phenyl-propan-1-one) (5.0) were mixed in a pan with a propeller blade mixer for 30 seconds at a speed of 500-1000 rpm, subsequently Ebecryl 264 (15% of aliphatic urethane triacrylate diluted in 1,6-hexanediol diacrylate), Ebecryl 284 (12 wt.% of aliphatic urethane diacrylate diluted in 1,6-hexanediol diacrylate), Ebecryl 3603 (20% of novolac epoxy acrylate diluted in tripropylene glycol diacrylate) (4.5) and Modaflo (ethyl acrylate and 2-ethylhexyl acrylate copolymer) (3.3) were introduced into the pan and mixed for 1-2 minutes at a speed of 2000 rpm. Finally MP 1300 zonyl fluoro additive (31.3) was introduced into the pan and mixed for 1-2 minutes at a speed of 500 rpm. The temperature during mixing was monitored and mixing was temporarily suspended when temperature exceeded 100degreesF, to obtain an UV curable composition.

L106 ANSWER 7 OF 8 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN  
AN 2001-221027 [23] WPIX

DNC C2001-066420

TI Coating composition containing fluororesin applicable to resin products such as film, sheet, molded article, lighting tool, casing, fan, key board, etc. to give chemical resistance, soiling resistance, etc..

DC A14 A82 G02

PA (CHUE-N) CHUEI BUSSAN KK

CYC 1

PI JP 2001019895 A 20010123 (200123)\* 13 C09D127-16

ADT JP 2001019895 A JP 1999-190445 19990705

PRAI JP 1999-190445 19990705

IC ICM C09D127-16

ICS C09D133-06

AB JP2001019895 A UPAB: 20010425

NOVELTY - Coating composition containing fluororesin applicable to the surface of molded resin articles comprises (a) vinylidene fluoride (co)polymer, and mixed liquid (b) of (b-1) liquid being solvent for (a) vinylidene fluoride (co) polymer and (b-2) liquid being not solvent for (a) vinylidene fluoride (co)polymer and essentially less dissolve and/or degrade the surface of substrate coated thereby wherein 5-

500 weight parts (b-2) is contained per 100 weight parts (b-1) and (a) is substantially dissolved in the mixed liquid.

DETAILED DESCRIPTION - Coating composition containing **fluororesin** applicable to the surface of molded resin articles comprises (a) vinylidene **fluoride (co)polymer**, and mixed liquid (b) of (b-1) liquid being **solvent** for (a) vinylidene **fluoride (co)polymer** and (b-2) liquid being not **solvent** for (a) vinylidene **fluoride (co)polymer** and essentially less dissolve and/or degrade the surface of substrate coated thereby wherein 5- 500 weight parts (b-2) is contained per 100 weight parts (b-1) and (a) is substantially dissolved in the mixed liquid.

USE - The coating composition is applicable to resin products such as film, sheet, molded article, out door use articles, lighting tool, casing, fan, key board, etc.

ADVANTAGE - The coating composition gives chemical resistance, soiling resistance, weather resistance to coated substrate.

Dwg.0/0

FS CPI

FA AB

MC CPI: A04-E10; A12-B01F; G02-A05

ABEX UPTX: 20010425

EXAMPLE - Paint was prepared by mixing 74.5 weight parts (pbw) vinylidene **fluoride copolymer** (VDF/TEF/HFP), 25.5 (pbw) methyl methacrylate-ethyl acrylate **copolymer** and 5 (pbw) **UV absorber** dissolved in mixed **solvent** of methyl isobutyl ketone, toluene, butyl acetate, and isopropanol.

L106 ANSWER 8 OF 8 WPIX COPYRIGHT 2006 THE THOMSON CORP on STN

AN 1988-089328 [13] WPIX

DNN N1988-067293 DNC C1988-040340

TI Magnetic disc mfr. - includes applying solution of **UV-curable acryl resin** in high b.pt. **solvent**, then fluoro resin onto metallic magnetic film.

DC A85 L03 T03

PA (MITQ) MITSUBISHI DENKI KK

CYC 1

PI JP 63042029 A 19880223 (198813)\* 4 <--

ADT JP 63042029 A JP 1986-184441 19860805

PRAI JP 1986-184441 19860805

IC G11B005-84

AB JP 63042029 A UPAB: 19930923

Acryl **UV** hardenable resin dissolved in a high b.pt. **solvent**, and a fluorine resin are successively applied onto a metallic magnetic film. **UV** is applied onto the upper surface of the fluorine resin.

The base is obtd. by plating Ni-P onto Al-Mg alloy. The metallic magnetic film is composed of Co-P, Co-Ni, etc. and has 300-1000 Angstroms thickness. The high b.pt. **solvent** is toluene, methylethyl ketone, xylene, methyl isobutyl ketone, etc. with b.pt. 70-150 deg.C. The acryl resin is a mixture of 100 weight% epoxy acrylate and 0.1-2 weight% triethyl

benzyl ammonium chloride, and is dissolved in the **solvent** at 0.01-1 weight%. The solution is applied such that the thickness after drying is 5-20 Angstroms.

ADVANTAGE - Superior durability.

1/2

FS CPI EPI

FA AB; GI

MC CPI: A04-E10; A10-E07B; A11-B05D; A11-C02B; A12-E08A2; L03-B05B;

L03-B05K  
 EPI: T03-A02; T03-N01

=> d his

(FILE 'HOME' ENTERED AT 10:39:18 ON 28 AUG 2006)  
 SET COST OFF

FILE 'HCAPLUS' ENTERED AT 10:39:48 ON 28 AUG 2006

L1 1 S US20040132881/PN OR (US2003-656648# OR JP2003-001605) /AP, PRN  
 E OKAMIYA/AU  
 L2 3 S E4  
 E AKIO/AU  
 L3 2 S E3  
 E ITO/AU  
 L4 9 S E3  
 E ITO T/AU  
 L5 1407 S E3-E7,E65,E73  
 E ITO NAME/AU  
 L6 111 S E4  
 E TAKAHIKO/AU  
 L7 1 S E5  
 E MINEBEA/PA,CS  
 E MINEBA/PA,CS  
 L8 540 S E3-E11 OR MINEBEA?/PA,CS  
 E NODA/PA,CS  
 E NODA SCRFEEN/PA,CS  
 E NODA SCREEN/PA,CS  
 L9 27 S E5-E12  
 E FLUOROPOLYMER/CT, CW  
 L10 1 S E4  
 E FLUOROPOLYMERS/CT, CW  
 L11 72046 S E3, E4  
 E E3+ALL  
 L12 115157 S E4+OLD, NT  
 L13 12685 S POLYMER?/CW, CT (L) (FLUORIN? OR FLUORID? OR FLUORO?)  
 L14 160531 S ?POLYM?(L) (?FLUORIN? OR ?FLUORID? OR ?FLUORO?)  
 L15 184076 S L10-L14  
 L16 8931 S L15 AND (UV OR ?ULTRAVIOL? OR ?ULTRA VIOL?)  
 E UV/CW, CT  
 L17 1732 S L15 AND E3  
 E UV/CT  
 L18 682 S L16, L17 AND (?COLOR? OR ?COLOUR?)  
 L19 357 S L15 AND ?COUMARIN?

FILE 'REGISTRY' ENTERED AT 10:48:06 ON 28 AUG 2006

L20 1 S 91-64-5

FILE 'HCAPLUS' ENTERED AT 10:48:20 ON 28 AUG 2006

L21 74 S L20 AND L15  
 L22 1039 S L18, L19, L21  
 L23 210 S L22 AND ?SOLVENT?  
 E SOLVENT/CW, CT  
 E E67+ALL  
 L24 8 S L22 AND E2+NT  
 L25 210 S L23, L24  
 L26 4 S L25 AND ?REPEL?  
 E REPELL/CT  
 E E11+ALL

E OIL REPEL/CT  
 E E4+ALL  
 E E2+ALL  
 L27 1011 S E1,E2  
 E E6+ALL  
 L28 919 S E3  
 E OILPROOF/CT  
 E E5+ALL  
 L29 1050 S E2  
 L30 1 S L22 AND L27-L29  
 L31 2 S L22 AND OILPROOF?  
 L32 1 S L31 NOT L30

FILE 'REGISTRY' ENTERED AT 10:56:04 ON 28 AUG 2006

E F/ELS  
 L33 77671 S E3 AND PMS/CI  
 E A/PCT  
 L34 10708 S E13  
 L35 67151 S L33 NOT L34

FILE 'HCAPLUS' ENTERED AT 10:57:06 ON 28 AUG 2006

L36 83953 S L34  
 L37 33371 S L35  
 L38 195370 S L15,L36,L37  
 L39 1135 S L38 AND L27-L29  
 L40 1407 S L38 AND (OILPROOF? OR OIL PROOF?)  
 L41 4553 S L38 AND OIL(L) (REPEL? OR RESIST?)  
 L42 4777 S L39-L41  
 L43 139 S L42 AND (UV OR ?ULTRAVIOL? OR ?ULTRA VIOL?)  
 L44 0 S L42 AND L20  
 L45 19 S L42 AND (UV OR ULTRAVIOL?)/CW,CT  
 E UV/CT  
 L46 14 S L42 AND UV ?/CT  
 L47 139 S L43-L46  
 L48 28 S L47 AND ?SOLVENT?  
 E SOLVENT/CW,CT  
 L49 1 S L47 AND E3  
 E E67+ALL  
 L50 0 S L47 AND E2+NT  
 L51 13 S L48 AND COAT?/SC,SX  
 L52 17 S L48 AND COAT?/CW,CT  
 E COATING/CT  
 L53 17 S L48 AND E11+OLD,NT  
 L54 1 S L48 AND F16C/IPC,IC,ICM,ICS  
 L55 1 S L48 AND H02K/IPC,IC,ICM,ICS  
 L56 6 S L48 AND C09D/IPC,IC,ICM,ICS  
 L57 17 S L51-L56  
 L58 10 S L48 NOT L49,L57  
 L59 18 S L49,L57  
 SEL AN 2 9 10 12 14 16  
 6 S E1-E12 AND L59  
 L60 39 S L1-L9 AND L38  
 L61 3 S L61 AND L42  
 L62 2 S L62 NOT 37/SC,SX  
 L63 36 S L61 NOT L62  
 L64 3 S L64 AND (UV OR ?ULTRAVIOL? OR ?ULTRA VIOL?)  
 L65 0 S L64 AND (UV OR ULTRAVIOL?)/CW,CT  
 L66 0 S L64 AND UV ?/CT  
 L67 0 S L64 AND L20  
 L68 8 S L60,L63 AND L1-L19,L21-L32,L36-L68

L70 3 S L69 AND F  
L71 8 S L69,L70  
SEL HIT RN

FILE 'REGISTRY' ENTERED AT 11:14:17 ON 28 AUG 2006  
L72 14 S E13-E26

FILE 'HCAPLUS' ENTERED AT 11:14:45 ON 28 AUG 2006

FILE 'WPIX' ENTERED AT 11:15:16 ON 28 AUG 2006

L73 30637 S A04-E10?/MC  
L74 13961 S (A04-E08 OR A04-E09)/MC  
L75 20091 S P0500/PLE  
L76 84470 S ?POLYM?(L) (?FLUORIN? OR ?FLUORID? OR ?FLUORO?)  
L77 5962 S ?FLUOROPOLYM? OR ?FLUORO POLYM?  
L78 109902 S L73-L77  
L79 1 S R00975/SDCN  
L80 2210 S R00975/SDCN OR 0975/DRN OR 104333-0-0-0/DCRE OR L79/DCR  
L81 110596 S L78,L80  
L82 306 S L81 AND B05D003-06/IPC,IC,ICM,ICS,ICA,ICI  
L83 5551 S L81 AND (UV OR ?ULTRAVIOL? OR ?ULTRA VIOL?)  
L84 150 S L81 AND E06-A01/MC  
L85 5857 S L82-L84  
L86 1692 S L85 AND ?SOLVENT?  
L87 3 S L86 AND F16C/IPC,IC,ICM,ICS,ICA,ICI  
L88 1 S L86 AND H02K/IPC,IC,ICM,ICS,ICA,ICI  
L89 44 S L86 AND (A12-H03/MC OR (Q7896 OR Q7885)/PLE)  
L90 10 S L86 AND (T03-F02C3C OR V06-M10 OR V06-M11 OR V06-U04A OR T03-  
L91 9 S L86 AND Q7421/PLE  
L92 61 S L87-L91  
L93 1 S L92 AND (OILPROOF? OR OIL PROOF?)  
L94 8 S L92 AND OIL(L)(REPEL? OR RESIST?)  
L95 4 S L92 AND B3496/PLE  
L96 12 S L92 AND B3485/PLE  
L97 14 S L93-L96  
SEL DN 1-7  
L98 7 S L97 NOT E27-E36  
SEL DN 1 3  
L99 2 S L98 AND E37-E39  
L100 47 S L92 NOT L97  
L101 38 S L100 AND AY<=2003  
L102 40 S L100 AND PRY<=2003  
L103 27 S L100 AND PY<=2003  
L104 40 S L101-L103  
SEL DN 2 6 8 10 27 39  
L105 6 S L104 AND E40-E48  
L106 8 S L99,L105 AND L73-L105

FILE 'WPIX' ENTERED AT 12:03:05 ON 28 AUG 2006

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